

METHODS OF FILLING GAPS BY DEPOSITION ON MATERIALS HAVING  
DIFFERENT DEPOSITION RATES

ABSTRACT

5           Methods of forming material in a gap in a substrate include forming a pattern  
to define a gap on a substrate. A bottom oxide layer is formed on a surface of the  
substrate and substantially filling the gap. The bottom oxide layer is etched back  
inside an opening in the gap to expose side walls of the gap so that a residual bottom  
oxide layer remains at a bottom of the gap. A top oxide layer is selectively deposited  
10 on the residual bottom oxide layer, wherein the top oxide layer is deposited in a first  
direction toward the opening at a faster rate than in a second direction away from the  
side walls.